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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/017,610	12/13/2001	Kevin P. Baker	GNE.2830P1C64	8144
7590	03/08/2004		EXAMINER	
Ginger R. Dreger Knobbe Martens Olson & Bear Sixteenth Floor 620 Newport Center Drive Newport Beach, CA 92660			WEGERT, SANDRA L	
			ART UNIT	PAPER NUMBER
			1647	
DATE MAILED: 03/08/2004				

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)
	10/017,610	BAKER ET AL.
Examiner	Art Unit	
Sandra Wegert	1647	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) Responsive to communication(s) filed on 06 March 2003.
- 2a) This action is **FINAL**. 2b) This action is non-final.
- 3) Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) Claim(s) 28-47 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) Claim(s) _____ is/are allowed.
- 6) Claim(s) 28-47 is/are rejected.
- 7) Claim(s) _____ is/are objected to.
- 8) Claim(s) 28-47 are subject to restriction and/or election requirement.

Application Papers

- 9) The specification is objected to by the Examiner.
- 10) The drawing(s) filed on 04 September 2001 is/are: a) accepted or b) objected to by the Examiner.
 Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
 Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
 - a) All
 - b) Some
 - c) None of:
 1. Certified copies of the priority documents have been received.
 2. Certified copies of the priority documents have been received in Application No. _____.
 3. Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) Notice of References Cited (PTO-892)
- 2) Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
 Paper No(s)/Mail Date 9/17/02
- 4) Interview Summary (PTO-413)
 Paper No(s)/Mail Date. _____
- 5) Notice of Informal Patent Application (PTO-152)
- 6) Other: _____

Detailed Action

Status of Application, Amendments, and/or Claims

The Preliminary Amendment, submitted 9 September 2002, and the Information Disclosure Statement, submitted 17 September 2002, have been entered. Claims 1-27 have been cancelled. Claims 28-47 have been entered.

Claims 28-47 are under examination in the Instant Application.

Informalities

Specification

The disclosure is objected to because of the following informalities:

URL's

The disclosure is objected to because it contains browser-executable code. This occurs, for example, on page 304, line 5, for example. All URL's should be removed from the Specification. Applicant may refer to web sites by non-executable name only. See MPEP § 608.01 (p).

Appropriate correction is required.

Continuity

Applicant has not complied with one or more conditions for receiving the benefit of an earlier filing date under 35 U.S.C. 119(e) as follows: The Provisional patent applications listed in the first paragraph of the instant specification do not refer to SEQ ID NO: 351, SEQ ID NO:

352, PRO 1755, or Figure 204. Therefore, for this Office Action, the filing date of 1 September 1999 of PCT/US01/20111 is considered as the priority date.

Claim Rejections/Objections

Claim Rejections - 35 USC § 101 and 35 USC § 112, first paragraph

The following is a quotation of 35 U.S.C. 101:

Whoever invents or discovers any new and useful process, machine, manufacture, or composition of matter, or any new and useful improvement thereof, may obtain a patent therefor, subject to the conditions and requirements of this title.

The following is a quotation of the first paragraph of 35 U.S.C. 112:

The specification shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the same and shall set forth the best mode contemplated by the inventor of carrying out his invention.

Claims 28-47 are rejected under 35 U.S.C. 101 because the claimed invention lacks a credible, specific and substantial asserted utility or a well-established utility.

The claims are directed to nucleotide(s) which encode a polypeptide of 243 amino acids (see Figures 203 and 204). Further claim limitations are presented to isolated nucleic acids having at least 80% sequence identity to a nucleic acid encoding the polypeptide of SEQ ID NO: 352, or the polypeptide of SEQ ID NO: 352 lacking its associated signal peptide. Claims are also presented encompassing vectors and cells comprising nucleic acids having at least 80% sequence identity to SEQ ID NO: 351. However, the specification does not disclose a function

for the nucleotide of SEQ ID NO: 351, encoding the polypeptide of SEQ ID NO: 352, in the context of the cell or organism.

No well-established utility exists for newly isolated complex biological molecules. However, the specification asserts the following as credible, specific and substantial patentable utilities for the claimed putative polynucleotide and polypeptide encoded by the claimed polynucleotide:

- 1) For use in the construction of “knock-in” or “knock-out” organisms (paragraph 55, for example).
- 2) In assays to screen for compounds capable of modifying the interaction between receptor and ligand.
- 3) To make antibodies to the polypeptide encoded by the polynucleotide of SEQ ID NO: 351 (paragraph 2930, for example).
- 4) To treat cancer.

Each of these shall be addressed in turn.

1) for use in the construction of “knock-in” or “knock-out” organisms. This asserted utility is credible but not specific or substantial. The specification does not disclose diseases associated with a mutated, deleted, or translocated PRO 1755 gene. Significant further experimentation would be required of the skilled artisan to identify any such a disease. The specification discloses nothing about the phenotypic result when the PRO 1755 gene is “knocked in” or “knocked out” or what specific tissues and cells are being targeted. Since this asserted

utility is not present in mature form, so that it could be readily used in a real world sense, the asserted utility is not substantial.

2) in assays to screen for compounds capable of modifying the interaction between receptor and ligand. This asserted utility is also credible and substantial but not specific. Such can be performed for any receptor-ligand pair. Additionally, the specification discloses nothing specific or substantial for the compounds that can be identified by this method.

3) To make antibodies to the polypeptide encoded by the polynucleotide of SEQ ID NO: 351. This asserted utility is credible and substantial, but not specific. Antibodies can be made to any polypeptide. However, if the specification discloses nothing specific and substantial about the polypeptide, both the polypeptide and its antibodies have no patentable utility.

4) To treat cancer. Paragraphs 4208-4211 of the instant Specification set forth the results of assays to determine the number of clone copies in a variety of tissues:

"The ΔCt values for DNA76396-1698 in a variety of tumors are reported above. A ΔCt of >1 was typically used as the threshold value for amplification scoring, as this represents a doubling of gene copy. The above data indicates that significant amplification of nucleic acid DNA76396-1698 encoding PRO1755 occurred: (1) in primary lung tumors: LT16, LT18 and LT22; and (2) in primary colon tumors: CT2, CT8, CT10, CT12, and CT14. Because amplification of DNA76396-1698 occurs in various lung and colon tumors, it is highly probable to play a significant role in tumor formation or growth. As a result, antagonists (e.g., antibodies) directed against the protein encoded by DNA76396-1698 (PRO1755) would be expected to have utility in cancer therapy" (discussed in paragraphs 4208-4211 of the Instant Specification).

However, a slight increase in clone copies in several tumor types is not indicative of a specific or substantial utility for PRO1755 for use as an agent to treat cancer. A slight increase in clone numbers in a cancerous tissue is no doubt due to an increased number of chromosomes, a very common characteristic of cancerous epithelial cells (see, for example: Hittelman, W., 2001, Ann. NY. Acad. Sci., 952: 1-12, especially pages 8 and 9, and; Crowell, et al, 1996,

Cancer Epidemiol. 5: 631-637), not because PRO1755 plays "a significant role in tumor formation or growth" (paragraph 4212). The asserted utility is therefore not specific. Experiments confirming the specificity and substantial utility of PRO1755 in terms of mRNA and protein expression were not performed. Significant further experimentation would be required of the skilled artisan to determine whether PRO1755 is expressed in certain cancers to the extent that "antagonists (e.g., antibodies) directed against the protein encoded by DNA76396-1698 (PRO1755) would be expected to have utility in cancer therapy." Thus, the asserted utility is not substantial.

Claims 28-47 are also rejected under 35 U.S.C. 112, first paragraph. Specifically, since the claimed invention is not supported by either a specific and substantial asserted utility or a well established utility for the reasons set forth above, one skilled in the art clearly would not know how to use the claimed invention.

The specification does not teach the skilled artisan how to use the claimed polynucleotides encoding the polypeptide of SEQ ID NO: 352 for any purpose. For example, there is no disclosure of particular disease states correlating to an alteration in levels or forms of the polypeptide such that the claimed polynucleotides encoding SEQ ID NO: 352 could be used as a diagnostic tool. The skilled artisan is not provided with sufficient guidance to use the claimed polynucleotides for any purpose.

Due to the large quantity of experimentation necessary to determine an activity or property of the disclosed polypeptide such that it can be determined how to use the claimed

polynucleotides encoding SEQ ID NO: 352 and to screen for activity, the lack of direction/guidance presented in the specification regarding same, the absence of working examples directed to same, the complex nature of the invention, the state of the prior art establishing that biological activity cannot be predicted based on structural similarity, and the unpredictability of the effects of mutation on protein structure and function, and the breadth of the claims which fail to recite particular biological activities, undue experimentation would be required of the skilled artisan to make and/or use the claimed invention in its full scope.

35 USC § 112, first paragraph – Written Description.

Claims 28-47 are also rejected under 35 U.S.C. 112, first paragraph, as containing subject matter which was not described in the specification in such a way as to reasonably convey to one skilled in the relevant art that the inventor, at the time the application was filed, had possession of the claimed invention.

The claims are directed to nucleotide(s) which encode a polypeptide of 243 amino acids (see Figures 203 and 204). Further claim limitations are presented to isolated nucleic acids having at least 80% sequence identity to a nucleic acid encoding the polypeptide of SEQ ID NO: 352, or the polypeptide of SEQ ID NO: 352 lacking its associated signal peptide. Claims are also presented encompassing vectors and cells comprising nucleic acids having at least 80%, at least 90% and at least 95% sequence identity to SEQ ID NO: 351.

The specification teaches a polynucleotide (SEQ ID NO: 351) and a polypeptide (SEQ ID NO: 352). However, the specification does not teach functional or structural characteristics of all

claimed polynucleotides. The description of one polynucleotide encoding a PRO polypeptide (SEQ ID NO: 352) is not adequate written description of an entire genus of functionally equivalent polynucleotides and polypeptides.

Vas-Cath Inc. v. Mahurkar, 19USPQ2d 1111, clearly states that “applicant must convey with reasonable clarity to those skilled in the art that, as of the filing date sought, he or she was in possession of *the invention*. The invention is, for purposes of the ‘written description’ inquiry, *whatever is now claimed*” (See page 1117). The specification does not “clearly allow persons of ordinary skill in the art to recognize that [he or she] invented what is claimed” (See *Vas-Cath* at page 1116).

With the exception of the sequences referred to above, the skilled artisan cannot envision the detailed chemical structure of all claimed polynucleotides and all encompassed PRO polypeptides, and therefore, would not know how to use them. Conception is not achieved until reduction to practice has occurred, regardless of the complexity or simplicity of the method of use. Adequate written description requires more than a mere statement that it is part of the invention and reference to a potential method of use. The nucleotide itself is required. See *Fiers v. Revel*, 25 USPQ2d 1601 at 1606 (CAFC 1993) and *Amgen Inc. v. Chugai Pharmaceutical Co. Ltd.*, 18 USPQ2d 1016.

One cannot describe what one has not conceived. See *Fiddes v. Baird*, 30 USPQ2d 1481 at 1483. In *Fiddes*, claims directed to mammalian FGF’s were found to be unpatentable due to lack of written description for that broad class. The specification provided only the bovine sequence.

Therefore, only an isolated nucleic acid molecule comprising the nucleotide sequence of SEQ ID NO: 351 and a polypeptide comprising the amino acid sequence of SEQ ID NO: 352, but not the full breadth of the claims, meets the written description provision of 35 U.S.C. §112, first paragraph. Applicant is reminded that *Vas-Cath* makes clear that the written description provision of 35 U.S.C. §112 is severable from its enablement provision (see page 1115).

35 USC § 112, first paragraph – Deposit Rules

Claims 28-47 are also rejected under 35 U.S.C. § 112, first paragraph, as containing subject matter which was not described in the specification in such a way as to reasonably convey to one skilled in the relevant art that the inventor(s), at the time the application was filed, had possession of the claimed invention. The invention appears to employ novel nucleic acid molecules (i.e., clone: *DNA 76396-1698*). Since the nucleic acid molecules are essential to the claimed invention they must be obtainable by a repeatable method set forth in the specification or otherwise readily available to the public. If the nucleic acid molecules are not so obtainable or available, the requirements of 35 U.S.C. § 112 may be satisfied by a deposit of the nucleic acid molecules. The Specification at paragraphs 3320 and 4275 indicate that the deposit was made under the Budapest treaty. However, Applicants have failed to provide a copy of the deposit receipt. If a deposit is made under the Budapest Treaty, then an affidavit or declaration by Applicant, or a statement by an attorney of record over his or her signature and registration number, stating that the specific nucleic acid molecules have been deposited under the Budapest Treaty and that the nucleic acid molecules will be irrevocably and without restriction or

condition released to the public upon the issuance of a patent, would satisfy the deposit requirement made herein. If a deposit is not been made under the Budapest Treaty, then in order to certify that the deposit meets the criteria set forth in 37 C.F.R. §§ 1.801-1.809, Applicant may provide assurance of compliance by an affidavit or declaration, or by a statement by an attorney of record over his or her signature and registration number, showing that

- (a) during the pendency of this application, access to the invention will be afforded to the Commissioner upon request;
- (b) all restrictions upon availability to the public will be irrevocably removed upon granting of the patent;
- (c) the deposit will be maintained in a public depository for a period of 30 years or 5 years after the last request or for the effective life of the patent, whichever is longer;
- (d) a test of the viability of the biological material at the time of deposit will be made (see 37 C.F.R. § 1.807); and
- (e) the deposit will be replaced if it should ever become inviable. Applicant's attention is directed to M.P.E.P. §2400 in general, and specifically to §2411.05, as well as to 37 C.F.R. § 1.809(d), wherein it is set forth that "the specification shall contain the accession number for the deposit, the date of the deposit, the name and address of the depository, and a description of the deposited material sufficient to specifically identify it and to permit examination." At p. 13, the date of the deposit and the address of the depository are missing. The specification should be amended to include such, however, Applicant is cautioned to avoid the entry of new matter into the specification by adding any other information. Finally, Applicant is advised that the address for the ATCC has recently changed, and that the new address should appear in the specification.

The new address is:

American Type Culture Collection
10801 University Boulevard
Manassas, VA 20110-2209

Claim Rejections - 35 USC § 112, second paragraph

The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

Claims 28-47 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

Claims 28-47 are rendered indefinite because of the phrase “extracellular domain.” The metes and bounds of Claims 28-47 are indefinite in view of the instant Specification which implies and states that the polypeptide encoded by the claimed polynucleotide(s) is a secreted protein. Such an “extracellular domain” would be found in a cleaved transmembrane protein, for

example, along with an intracellular domain, but is not recognized in secreted proteins since they are entirely "extracellular."

Conclusion: Claims 28-47 are rejected for the reasons recited above.

Advisory information

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Sandra Wegert whose telephone number is (571) 272-0895. The examiner can normally be reached Monday - Friday from 9:00 AM to 5:00 PM (Eastern Time). If attempts to reach the examiner by telephone are unsuccessful, the Examiner's supervisor, Gary Kunz, can be reached at (571) 272-0887.

The fax number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

SLW

3/4/04

Elizabeth C. Kemmerer

ELIZABETH KEMMERER
PRIMARY EXAMINER